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AMSAT NEWS SERVICE
ANS-171

The AMSAT News Service bulletins are a free, weekly news and information service of AMSAT North America, The Radio Amateur Satellite Corporation. ANS publishes news related to Amateur Radio in Space including reports on the activities of a worldwide group of Amateur Radio operators who share an active interest in designing, building, launching and communicating through analog and digital Amateur Radio satellites.

The news feed on http://www.amsat.org publishes news of Amateur Radio in Space as soon as our volunteers can post it.

Please send any amateur satellite news or reports to:
ans-editor at amsat.org.

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ANS-171 AMSAT News Service Weekly Bulletins

AMSAT News Service Bulletin 171.01
 >From AMSAT HQ KENSINGTON, MD.
DATE June 19, 2016
To All RADIO AMATEURS
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2016 Candidates for the AMSAT-NA Board of Directors Announced

The 2016 candidates, in alphabetical order by last names are:

Tom Clark, K3IO
Clayton Coleman, W5PFG
Mark Hammond, N8MH
Bruce Paige, KK5DO
Paul Stoetzer, N8HM

This year AMSAT-NA will be electing three voting members of the Board of Directors. These will go to the three candidates receiving the highest number of votes. In addition, there will be two alternates chosen, based on the next highest number of votes received.

Ballots will be mailed to the AMSAT-NA membership by July 15, 2016 and must be received at the AMSAT office by September 15, 2016 in order to be counted. Those sent outside North America will go by air mail. If you have not received your ballot package in a reasonable time for your location, please contact the AMSAT office. Completed ballots should be returned as promptly as possible, and those from outside North America preferably by air mail.

Election of Board members is both an obligation as well as an opportunity by our membership to help shape the future direction of AMSAT. Please take the time to review the candidate statements that will accompany the ballot and determine who you wish to see on the Board. You have the option to vote for up to three candidates.

[ANS thanks AMSAT-NA Secretary, Paul Stoetzer, N8HM, for the above information]

May/June 2016 Issue of The AMSAT Journal Sent To Press

The May/June 2016 issue of The AMSAT Journal has gone to press and should be arriving in member's mailboxes soon.

In this issue:
*Dateline Dayton - Notes from Hamvention 2016 - Joe Kornowski, KB6IGK and Keith Baker, KB1SF/VA3KSF
*Tom Clark, K3IO, Receives ARRL President's Award
*GNU Radio Companion Protoype for a Dual Analog/Digtal Transponder System for the AMSAT GEO Mission - Dr. William C. Headley, KM4KAL, Dr. Robert McGwier, N4HY, and Dr. Tom Clark, K3IO
*Orbital Debrief - Paul Stoetzer, N8HM
*Member Footprints - John Smith, KI4RO
*An Arduino Controlled GPS Corrected VFO - Gene Marcus, W3PM/GM4YRE
*On the Grids - Melvin C. Vye, W8MV
*AMSAT Activites at Greater Houston Hamfest 2016 - Allen F. Mattis, N5AVF and Andy MacAllister, W5ACM
*GOTA Station Demos Satellites to Over 400 Students - Richard Siff, WA4BUE

[ANS thanks AMSAT-NA Secretary, Paul Stoetzer, N8HM, for the above information]

Amateur Radio Geostationary Satellite Phase 4B Information

At website hosted by the Hume Center for National Security and Technology at Virginia Tech lists the relevant information available for the Phase 4B HEO Satellite. The beginning parts of the brochure state:

Hands on, Minds on; RF and Security Research at Virginia Tech:
• On-orbit learning laboratory to develop new capabilities in satellite

communications and amateur radio
- Digital protocols to enable push-to-talk, WiFi, streaming video, etc.
- Onboard processing - geolocation, co-channel, machine learning
- App development and real time experimentation
- Beam steering and coordinated collection
- User authentication and prioritization
- Open cryptography

AMSAT Phase4B Project Program Specifications:
- SDR-based 5 & 10 GHz amateur satellite payload being designed to take advantage of a geosynchronous launch opportunity
- Rideshare opportunity on the US Air Force Remote Sensing Program Office Wide Field of View (WFOV) geosynchronous satellite being designed by Millennium Space Systems
- Software-defined radio (SDR) payload from Rincon Research Corporation

Dr. McGwier has promised upcoming articles for the AMSAT Journal and QST.

see the full description at:
http://www.hume.vt.edu/geo/

[ANS thanks Bob McGwier, N4HY, and the Hume Center for National Security and Technology at Virginia Tech, for the above information]

ISRO PSLV-C34 will Launch 20 Satellites from Space Centre at Andhra Pradesh June 22

The Indian Space Agency has announced that it would be launching twenty satellites from its Sriharikota barrier Island base off the southeast coast on June 22.

According to the Indian Space Research Organization (ISRO), the Indian rocket
Polar Satellite Launch Vehicle (PSLV) will lift off from Sriharikota in Andhra Pradesh with 20 satellites at 9.25 am that day. While the rocket's main cargo will be India's 725.5 kg Cartosat-2 series satellite for earth observation, the other 19 satellites weighing around 560 kg are from Canada,
Germany, Indonesia and the United States as well as one satellite each from Sathyabama University, Chennai, and the College of Engineering, Pune, said the Indiatoday.in report.

The satellites will be launched from the second launch pad with a total payload of 1,288 kg. The whole mission will take approximately 26 minutes for
its completion. The images sent by the Cartosat satellite will be useful for
cartographic, urban, rural, coastal land use, water distribution and other applications. The Cartosat series of satellites was originated in India and is a part of Indian Remote Sensing Program.

According to Indiatoday.in, the Swayam satellite weighing 1kg from Pune will
provide point-to-point messaging services to the HAM radio community. HAM Radio, or Amateur Radio, is a popular service that brings people, electronics and communication together. People use ham radio to talk across town, around the world, or even into space, all without the Internet or mobile phones.

The 1.5 kg Sathyabamasat from Sathyabama University will collect data on greenhouse gases.

Satellite	Uplink	Downlink	Beacon	Mode
BEESAT-4	.	435.950	435.950	4800bps GMSK,CW
BIROS	.	437.525	.	4800bps GMSK
LAPAN-A3	435.880	145.880	145.825	FM,APRS
Max Valier	.	145.860	145.960	CW
Sathyabamasat	.	145.980	.	2400bps BPSK
Swayam COEP	.	437.025	437.025	1200bps BPSK,CW
Venta-1	.	.	437.325	CW

see
http://www.newsgram.com/in-a-single-mission-on-june-22-isro-will-launch-20-satellites-from-space-centre-at-andhra-pradesh/

https://amsat-uk.org/2016/05/25/amateur-satellite-launch-from-india/

[ANS thanks AMSAT-UK and newsgram.com for the above information]

Data Modes on Ham Radio Satellites

Tony Bombardiere, K2MO has released a video showing operation of PSK31, PSK63, and Hellshreiber on the amateur radio satellites.

He demonstrates WinPSK and IZ8BLY's Hellschreiber which both have satellite capabilities. Essentially, the applications make it easy for the operator to monitor digital signals on the satellites downlink while simultaneously transmitting on the satellites uplink; it's accomplished by utilizing the sound cards full-duplex operation.

https://www.youtube.com/watch?v=WaaHy02g9cM
https://amsat-uk.org/2016/06/17/data-modes-on-ham-radio-satellites/

[ANS thanks AMSAT-UK and Tony Bombardiere, K2MO, for the above information]

LibreCube Initiative Invites Comments on CubeSat PC Board Standardization

On June 16 Cubesat.org announced on their cubesat(a)cubesat.org e-mail list that the LibreCube Initiative, a community-driven initiative to provide open source solutions for space and earth exploration, is seeking input to formalize the mechanical specification of the stacked PC/104 circuit boards utilized in most CubeSat designs.

The LibreSat project invites inline comments into the draft document:
https://docs.google.com/document/d/1vEx4Wg5NjpI21a7JNdPjHnXPRjmNMTzArlYTK1sg1Ng/edit?usp=sharing

You may also discuss about it in the forum:
http://librecube.net/forums/topic/librecube-board-specification/

When finalized, this specification shall become binding for future LibreCube open source CubeSat projects, but may be useful to other members of the CubeSat community as well.

More information about the LibreCube project can be found on their web page: http://www.librecube.net

The e-mail contact provided on the announcement is:
Email: artur.scholz(a)librecube.net

[ANS thanks CubeSat.org and LibreCube.net for the above information]

Special Calls From Brazil on the Satellites

The Brazilian Amateur Radio Satellite Community of ARSATC, is celebrating its first "birthday" on the air with the calls ZV8SAT, ZX9SAT, ZV1SAT, and ZV2SAT until the end of the month. They will be QRV on the Satellites; QSL for all calls via PT9BM and LoTW. More information is on-line at: http://www.arsatc.org/home.html

[ANS thanks the DXNL 1993 - June 15, 2016 DX Newsletter for the above information]

Special Event Station K1D to Operate Satellites on Field Day 2016

Field Day is always the fourth full weekend of June, beginning at 1800 UTC Saturday and running through 2059 UTC Sunday. Field Day 2016 is June 25-26.

In an effort to encourage more kids and their families to get involved in the hobby, the kids at Ham Radio (dot) World are working to put an all-kids Special Event ARRL Field Day station on the air in 2016. This station will have the special event call sign of K1D and it will be set-up, operated, and put away by kids who are ham radio operators. Kids of all ages and their parents (both licensed hams and non-hams alike) are encouraged to come out and participate in this exciting event. New hams and even non-hams can experience the excitement of talking to people around the world with the Get On the Air (GOTA) station, which will have the callsign K4G. Both stations
will operate from grid EL99IA in Deland, Florida, USA.

The kids will be on the HF bands and on the Amateur Radio satellites. K1D will
be joined by AMSAT’s Vice-President Operations, Drew Glasbrenner, KO4MA, who will be a kid-for-a-day to help get the kids on the linear satellites. Look for them and give them a shout!

The K1D Special Event Field Day station will be built by the kids prior to the Field Day activities. The kids have built a solar power solution—from scratch—to use to power their K1D Special Event Field Day station. Kyocera Solar and West Mountain Radio have graciously donated parts to this solar power supply – THANK YOU! They also plan on using a Genasun MPPT Charge

Controller to manage charging the battery. Emmett of Radiowavz.com is providing a Sentinel Expedition Hex Beam for K1D. Finally, the kids have built their own W7FG True Ladder Line antenna with parts provided by TrueLadderLine.com and are building additional antennas to use for Field Day. Keep watching Ham Radio (dot) World for videos of the kids as they build their Special Event Station.

Join WX4TVJ (Zechariah), who was licensed at 12 years old,
AE4FH (Faith Hannah), who was licensed at 10 years old, KM4IPF (Hope),
who was licensed at 8 years old, & 7 year old Grace (KM4TXT)for Field Day 2016. Listen for them on the air and give them a break by making K1D one of your 2016 Field Day contacts.

For helping to encourage youth in amateur radio, stations who work K1D and/or K4G during the 2016 ARRL Field Day will be eligible for a special K1D/K4G Commemorative QSL card.

More information at
http://hamradio.world/

[ANS thanks James, WX4TV for the above information]

ARISS Delivers the Excitement of Space Exploration to UK Students

Two stories shared in UK media capture the excitement and reward of the UK’s ARISS ham radio operations team’s efforts in connection with Tim Peake’s
Principia Mission.

Carole Cadwalladr, a writer from The Guardian (a UK national newspaper) was present for the ARISS contact on May 9 at The King’s School, Ottery St. Mary
in Devon, UK. In the Sunday, May 29 edition, she posted a story that beautifully captures the spirit of space adventure and how the ARISS program
brings that excitement to students, their educators, and their communities in profound ways. The story is at:

https://www.theguardian.com/science/2016/may/29/tim-peake-ground-control-revive-science-interest-schools-space

TXFactor produced a documentary about the ARISS program’s interface with Tim Peake’s Principia Mission. The documentary describes the process UK schools undertook to apply for a scheduled radio interview with Peake, and preparations for the contact opportunity by the King’s School in Devon. It details the station set up by the ARISS UK Operations team which accomplished successful radio contacts between 10 UK schools during Peake's Principia endeavor. Seven of these ten contacts included the reception of HamTV signals both at the school (using a mobile based ATV reception facility)
and a 3.8m dish located at the Goonhilly Satellite Earth Station.

Watch the video on YouTube at:
http://www.txfactor.co.uk/txf011.shtml

[ANS thanks ARISS for the above information]

NASA Astronaut Scott Tingle Earns Amateur Radio License, KG5NZA

NASA Astronaut Scott Tingle Earns Amateur Radio License. He is now the owner of call sign KG5NZA and will support ARISS on upcoming ISS Expeditions 53 and 54.

NASA Astronaut Scott D. Tingle has just earned his Amateur Radio license, passing his exam on June 3, 2016. The FCC issued the call sign, KG5NZA, to him on June 8. In January, as he began some NASA training in Russia he requested the license study material. He had heard about ARISS during his astronaut training, and in January, decided to study on his own.

The astronaut training program runs for at least two years, is intense, and heavily loaded with all types of required studies, and Amateur Radio is optional. Tingle earned his technician license and plans to use it to support ARISS during his scheduled time on the International Space Station as part of the Expedition 53 crew. Launch is tentatively planned for fall of 2017. His stay continues into Expedition 54.

Tingle graduated from Purdue University in West Lafayette, Indiana, in 1988 with a master's degree in Mechanical Engineering, specializing in fluid mechanics and propulsion. A captain in the United States Navy, he has served
as a combat pilot in Iraq and Afghanistan and has earned copious awards and commendations. He was selected for the astronaut program in 2009 as one of 14 members of NASA Astronaut Group 20, and graduated in 2011.

ARISS Chair Frank Bauer, KA3HDO, said, "The ARISS Team is excited to see continuing great interest among the Astronauts and Astronaut Candidates who are looking forward to supporting Amateur Radio activities through the ARISS platform."

About ARISS

Amateur Radio on the International Space Station (ARISS) is a cooperative venture of international amateur radio societies and the space agencies that support the International Space Station (ISS). In the United States, sponsors are the Radio Amateur Satellite Corporation (AMSAT), the American Radio Relay League (ARRL), and the National Aeronautics and Space Administration (NASA). The primary goal of ARISS is to promote exploration of science, technology, engineering, and mathematics (STEM) topics by organizing scheduled contacts via amateur radio between crew members aboard the ISS and students in classrooms or informal education venues. With the help of experienced amateur radio volunteers, ISS crews speak directly with large audiences in a variety of public forums. Before and during these radio
contacts, students, teachers, parents, and communities learn about space, space technologies, and amateur radio. For more information, go to:

www.ariss.org
www.amsat.org
www.arrl.org

Also, join us on Facebook:
Amateur Radio on the International Space Station (ARISS)

Follow us on Twitter:
ARISS_status

[ANS thanks Dave Jordan, AA4KN and ARISS for the above information]

AMSAT Events

Information about AMSAT activities at other important events around the country. Examples of these events are radio club meetings where AMSAT Area Coordinators give presentations, demonstrations of working amateur satellites, and hamfests with an AMSAT presence (a table with AMSAT literature and merchandise, sometimes also with presentations, forums, and/or demonstrations).

*Wednesday, 6 July 2016 – Chehalis Valley Amateur Radio Society meeting in Chehalis WA

*Saturday, 13 August 2016 – KL7KC Hamfest in Fairbanks AK

[ANS thanks AMSAT-NA for the above information]

ARISS News

Sucessful Contacts

* A telebridge contact via VK4KHZ with students at Briargreen Public School,
Nepean, ON, Canada was successful Mon 2016-06-13 at 15:19:15 UTC 31 deg. Astronaut Timothy Peake, KG5BVI answered 15 questions for an audience of 250
students along with parents and visitors.

Briargreen is an amazing K-6 open-concept school nestled in a suburban community of west Ottawa in Ontario, Canada. It is a caring community of diverse students, teachers and parents, who love to share both our in-class and out-of-class experiences with each other. Some of our noteworthy special
events include our Kindergarten Chinese New Year parade, Terry Fox Run activities and junior community games days. Our learning community has some of the most wonderful students in the world! Visit our website at

briargreenps.ocdsb.ca/Pages/home.aspx

* Glenmore State High School, Rockhampton, Queensland, Australia, telebridge via W6SRJ
The ISS callsign was scheduled to be NA1SS
The scheduled astronaut was Tim Kopra KE5UDN

A telebridge contact via W6SRJ with students at Glenmore State High School, Rockhampton, Queensland, Australia was successful Mon 2016-06-06 08:39:31 UTC 31 deg.

The audience assembled in the school’s 500 seat sports stadium. All seats were filled with an additional 100 persons standing as astronaut Tim Kopra,

KE5UDN provided answers to questions from students.

Glenmore High School is a modern, progressive secondary school providing quality education for students from years 7 to 12. Since its establishment in 1975 Glenmore High School has earned a reputation for high quality educational programs and services which develop a passion in students for learning and life.

Glenmore SHS runs an extension Science/Math program named “SCOPE” where students enroll and work through year levels at an accelerated rate, which allows them to finish traditional schooling early and conduct further studies at our local university, to which we are partnered (Central Queensland
University), during their final year of schooling.

Students in the “SCOPE- Science” program are encouraged to participate in our
schools astronomy club and robotics club as an extra curricula activity. The
schools astronomy club works with local primary schools, teaching about space
and running viewing evenings.

* Bouze Island Elementary and Junior High School, Homeji, Japan, direct via 8N3B
The ISS callsign was scheduled to be NA1SS
The scheduled astronaut was Timothy Peake KG5BVI

A direct contact via 8N3B with students at Bouze Island Elementary and Junior High School, Homeji, Japan, was successful Sat 2016-06-04 08:31:09 UTC 74 deg. Astronaut Timothy Peake KG5BVI answered 16 questions for students and an audience of 500.

Watch a video of the interview at
http://www.ariss.jp/bouze/bouze.wmv

Bouze Island is one of the Ieshima small Islands which are located in the Seto Inland sea of Hyogo Prefecture in Japan. There are about 1400 people on the island and are part of the marine products industry. They live with simplicity and are friendly. But the students of this Island have not had a chance for scientific experience as part of their school education because of their remote location. There are 140 persons in the elementary school and 100 persons in the junior high school.

Upcoming Contacts

* Chuvash Republic, Russia, direct via TBD
The ISS callsign is presently scheduled to be RSØISS
The scheduled astronaut is Oleg Skripochka RN3FU
Contact is a go for Sun 2016-06-19 09:30 UTC

Watch
http://www.ariss.org/upcoming-contacts.html
for information about upcoming contacts as they are scheduled.

[ANS thanks ARISS, Dave, AA4KN, and Charlie, AJ9N for the above information]

Satellite Shorts From All Over

AMSAT Argentina Balloon Flight with Crossband Repeater

AMSAT Argentina plans a high altitude balloon launch carrying a crossband repeater from Las Heras in the Mendoza province on July 9, 2016. Launch is currently planned for 10:00 AM local time, depending on weather conditions. AMSAT Argentina will also present news of their satellite plans.

NEA-1 Repeater Information

Uplink: 145.725 Mhz FM (123.0 Hz CTCSS)
Downlink: 436.725 Mhz FM
APRS information will be relayed via:
http://aprs.fi/?call lu7aa-1 BALLOON NEA - 1

[ANS thanks AMSAT Argentina for the above information]

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In addition to regular membership, AMSAT offers membership in the President's Club. Members of the President's Club, as sustaining donors to AMSAT Project Funds, will be eligible to receive additional benefits. Application forms are available from the AMSAT Office.

Primary and secondary school students are eligible for membership at one-half the standard yearly rate. Post-secondary school students enrolled in at least half time status shall be eligible for the student rate for a maximum of 6 post-secondary years in this status. Contact Martha at the AMSAT Office for additional student membership information.

73,
This week's ANS Editor,
Joe Spier, K6WAO
k6wao at amsat dot org